BULLETIN OF
THE NEW YORK ACADEMY
OF MEDICINE

VOL. 46, NO. 11 NOVEMBER 1970

CONTINUING EDUCATION OF THE PRACTICING PHYSICIAN

A STATEMENT BY
THE COMMITTEE ON MEDICAL EDUCATION*
OF
THE NEW YORK ACADEMY OF MEDICINE

IT is generally conceded and widely preached that the medical education of the physician should be a continuous process that continues throughout his active lifetime as a practitioner. It has been frequently affirmed that the obtaining of an M.D. degree, licensing by a state, and certification by a specialty board should not be regarded as end points in his training, but rather as permits to proceed on a course of treating patients while learning. This has long been so and, within the past few years, there has been mounting pressure, from within the profession itself, for the establishment of minimum standards for continuing medical education.

In support of this position the large and expanding body of scientific and medical knowledge, changing concepts about the role of the physician in society, the evanescent nature of man's memory, and the practical isolation of many practitioners from professional contact with their peers have been cited. To those should be added some of the characteristics and interests of tomorrow's medical students and trends in

*Approved by the Committee on Medical Education, May 14, 1970.

medical education, which promise to accent the need for continuing education.[1, 2] As described by Dr. D. H. Funkenstein,[1] director, Program for Research in Medical Education, Department of Psychiatry, Harvard Medical School, these include decreased emphasis on scientific attitude; shift to the pragmatic use of science—biological, physical, social, and behavioral—rather than attempting to make the physician a "scientist"; increased interest in a shortened time span between secondary school and career; increased study and interest in social and behavioral sciences; decreased study and interest in biological and physical sciences not directly relevant to clinical problems.

The half-life of a physician's medical knowledge and skills generally is taken to be about 10 years after the end of his formal training.[3] This apparent loss of knowledge is the result of a combination of forgetting plus failure to keep up-to-date with changes and advances in medicine; the factor of forgetting possibly carries a bit more weight.[4]

Granted that the education of the physician should be a continuing process over his lifetime of practice, what should be the nature of this education and what are the available effective procedures? Much money is being spent on programs and gadgets. Ideas and assertions are almost legion, but factual evidence of effectiveness, in terms of resultant improvement in the practice of medicine, is scarce and hard to come by. Following are some findings and observations with examples of programs now widely in use.

The televised Clinical Science Seminars instituted by the New York Academy of Medicine in 1963 and terminated in 1968 failed to draw substantial audiences and, according to one analysis,[5] failed to demonstrate much of a learning effect. In 1968 an advance mailing to 6,000 generalists and internists in the metropolitan area, announcing six weekly one-hour televised lectures, resulted in a confirmed audience of 249 who saw, on the average, two thirds of the programs. Dr. John F. Stokes, reciting the British experience, stated that "The results of our efforts to keep doctors abreast of the times through the medium of television have been somewhat disappointing, and we may do better to concentrate on moulding the attitude of those now entering the profession."[6] A report on an evaluation of the northern California postgraduate medical television programs concluded: "Neither the information level nor the behavior of the target audiences were affected by the programs."[7] Dr. A. T. Hunter,[8] in a report on the medical educa-

tion television programs (METV) of the Committee on Continuing Education of the Faculty of Medicine of the University of Western Ontario, was a bit more sanguine in his conclusions. He found that "Medical Education Television is seen as being a potentially useful aid to continuing medical education by a large percentage of doctors, but is not seen as fulfilling that potential in its present form." An anonymous comment in the February 1970 issue of the newsletter of the Association of Medical Television Broadcasters, Inc., points out a major problem with this medium: "Although television hardware development has progressed rapidly in the last decade, the educational quality of programming and production innovation has not improved correspondingly. The use of audiovisuals in health sciences is in a state of polished mediocrity."

Dr. David P. Lauler[9] believes that the failure of medical television to date as an isolated entity is to be found in its isolation. "The exploitation of a given medium (television) without leveraging its advantages in juxtaposition to other media doomed the television medium to failure. . . . The major limitation in the production of television or movie material resides in the software aspect."

Dr. Lauler also emphasizes the importance of motivation to the learning process. "No matter how effective the teaching exercise is, unless the learner involves himself in the exercise, all is for naught." As Donald H. Williams[10] has commented, "It is doubtful if salvation cometh from dutiful somnolent passivity in a pew on Christmas and Easter Sundays each year." Taylor and his associates, in their analysis of criteria of physician (specialists) performance[11] found the "number of refresher courses taken during career" to be an "unstable" criterion of little importance. Williamson and McGuire[12] compared the effectiveness of continuing education by means of the consecutive case (simulated) conference with that of the traditional lecture method and found that, after a six-month interval, "overall, no significant change in clinical judgement, as measured by these problems, could be documented for either educational method."

Lewis and Hassanein[13] found that 57% of the 2,090 physicians practicing in Kansas during 1956-1965 participated in courses of continuing education offered by Kansas State University; about 7% took as many as half the course-hours recorded. Pertinent here are the facts that "maternal and perinatal death rates in various areas were

unrelated to hours of continuing education in obstetrics and pediatrics taken by local physicians. Similarly, high regional rates for certain operative procedures were not associated with increased use of appropriate postgraduate education."

Motivation also requires that the learner place himself in a learning environment. Vollan (cited by Lewis and Hassanein[13]) found attendance at postgraduate courses to be directly related to the number of years of residency training after graduation. Also, it was found to be highest for those practicing in communities of less than 5,000 people and lowest in metropolitan areas. Apparently New York City fits the pattern.

The annual Graduate Fortnight instituted by the New York Academy of Medicine in 1927 proved to be immensely popular during the 1930's and again on the termination of World War II with young physicians returning from the services and others preparing for board examinations or in need of refresher courses to assume desired positions in civilian life. As the immediate, practical value of the Fortnight became less and less apparent, attendance dropped off, and the Fortnight was shortened to a two-day and then to a one-day session, finally to be dropped and replaced by the televised Clinical Science Seminars, the fate of which has been previously described. Dr. Isidore Sternlieb[14] has described the educational activities of the Bronx County Chapter of the American Academy of General Practice (AAGP) in part as follows:

> In January of 1962, we of the Bronx County Chapter of the American Academy of General Practice sponsored a course in practical psychiatry for physicians under the aegis of the New York State Department of Mental Hygiene and given by the faculty of the Albert Einstein College of Medicine. We invited about 1,400 physician members of the Bronx County Medical Society, which included a little over 100 general practitioners who were members of the AAGP and required certification of continuing education. We enrolled about 60 physicians, 45 of whom were members of the AAGP who required the course credit. Only 15 of the remaining 1,300 doctors took the program. They didn't need certification and apparently were not interested. ——But we never reached a greater percentage of the doctors, except during one year, about two years ago, when Medicaid participation required 50 hours of continuing education of each physician. That year we had a 100 per cent in-

crease in enrollment and these new doctors told me that they had not taken any refresher course since they graduated from medical school 25 to 35 years ago. This spurt in attendance fell off immediately after Medicaid dropped this requirement.

As stated by Torrens and Weinstein,[15] a major impediment to the continuing education of the general practitioner arises from the fact that "the organization and structure of the present-day urban teaching hospital is not geared to the needs of the nonspecialist physician. As a result, the nonspecialist physicians in the communities around urban teaching hospitals are unable to play an effective role in upgrading the quality of medical care delivered by the community physician. In order to change this situation new structures must be devised within the urban teaching hospitals to allow nonspecialist physicians greater access to the skills and resources of the teaching hospital." Referring to physicians in the community about St. Luke's Hospital in New York City, Torrens and Weinstein reported that, when asked why they did not take a more active part in the programs open to them in three teaching hospitals in the area, "almost all of the physicians replied that the programs were of little value to them in their practices. Most of the programs at the three major teaching hospitals were directed toward members of one particular medical specialty or another; they were usually conducted by physicians or researchers who spent most of their time working in a limited area of a particular medical specialty. The nonspecialist physicians from the community felt that it would be necessary for them to have much more background information and training in the particular medical specialty before they could interpret, integrate, and use the information provided by these laboratory-oriented lectures. As a result, they did not attempt to take part in these sessions." Those who did take part in some sort of organized continuing medical education were said to have done so under the auspices of "the New York County Medical Society, The New York Academy of Medicine, various specialized medical-social organizations, or the non-teaching hospitals with which they were affiliated." Torrens and Weinstein recommend that each teaching hospital should establish a single, clearly defined office or department whose sole purpose would be to handle the referral of patients and requests for assistance from the physician in the community. "There should be one single place to which the community physician knows he can turn for

assistance with problems of patients in his practice and from which he can obtain information about patients he has referred to the teaching hospital for care."

In spite of the abundance of educational opportunities in New York State, and particularly in New York City, the New York State Committee on Medical Education[16] in 1963 stated that ". . . it is estimated that no more than 25% of practicing physicians participate in continuing education of any kind—even hospital staff meetings—with regularity." The committee went on to suggest "that the situation might eventually become so acute as to require periodic examination for re-licensing in the profession."

Among the reasons advanced by Dimond[17] for poor attendance at postgraduate courses is the fact that practicing physicians represent one of the most "seasoned" of student audiences. "These students will not tolerate useless class-room hours much less pay for them. There must be a high order of user satisfaction to make these students willing to participate." He recommends sabbatical leaves for the private practitioner and the establishment of regional and national graduate medical centers catering and devoting themselves to the needs of the man in practice. "The opening of medical education, spreading medical student and house officer teaching to all regional facilities, will be a key stimulus to bring the practicing physician into that best of environments where one is both teacher and taught."

Three quotations from *Continuing Medical Education*, [18] the publication of the American Medical Association may be helpful at this point.

> 1) If the physician were to have some way of judging the end results of his performance and were to see that there were deficiencies when comparing the outcome of his efforts with the outcome that might be expected, he would then be in a position to ask himself what there is about his performance that yields results that are less than criterion results. To accomplish this goal he would need some way of examining what it is he does, so that he might know precisely what he might better do differently. This is the essence of education: *specific identification of educational needs based on analysis of real situations, with subsequent introduction of specific educational efforts directed toward those needs* [emphasis ours]. To-date, most programs for continuing medical education have not been organized on this basis.

2) The science of the medical disciplines provides the subject matter of medical texts. The science and the art of clinical practice, i.e., the diagnostic and therapeutic process, also find expression in the medical literature but depend for the most part on guided learning through *repetitive* [emphasis ours] clinical experiences in which the physician acquires certain attitudes, skills, and essential information about many subjects. But there is no objective uniformity of the diagnostic-therapeutic process and certainly the physician can never cover every clinical situation in his learning experience. Much depends on transfer of knowledge—*and on the integrity of the physician's problem-solving ability* [emphasis ours].

Existing education systems largely disregard the facts of place and circumstance under which physician and patient come together, of the variability in stage and severity of the disease process, and of the variations in expected outcome as determined by time-process factors of repeated physician-patient contacts.

3) Meeting the continuing education needs of practicing physicians really implies a *constructive approach to the removal of impediments to their efficient performance* [emphasis ours]. Such impediments can be of great diversity and may not be at all a function of the information input to the physicians. Thus, a principle function of the concept of "community medicine," inasmuch as it attempts to mobilize community resources to aid the physician to meet the health requirements of the American people, is identical with the prime function of continuing medical education.

The aim of continuing medical education is to maintain and improve standards of medical care and the health and welfare of the patient. Essential for the success of educational programs are relevance, repetition, active participation, facilitation, and motivation. Essential also is recognition of "the ephemeral nature of factual knowledge and the relative permanency of learning sets, i.e., study habits and skills, as well as attitudes towards and motivation for learning."[19]

Dr. Eisele[20] cites Dr. R. L. Evans as authority for the statement that "There is a consensus that there are 3 basic criteria for continuing medical education: it must be continuous, it must be community-hospital-based, and it must be directly related to the physician's day to day activities in the care of his patients." Eisele goes on to say that "There is no educational tool that equals the internal medical audit

in meeting these criteria. The episodic educational exposures provided by refresher courses and by the great variety of educational experiences brought into the hospital from the medical center are useful and highly desirable, but they are merely adjuncts and they are not effective substitutes. When outside programs replace the hospital's own patient-oriented programs, and this is often a great temptation, the medical staff's continuing education is incomplete and inadequate." Dr. Clement R. Brown, Jr.,[21] has described a combined education-treatment program, based upon the medical audit and problem-oriented patient records, that is under way at the Chestnut Hill Hospital in Philadelphia, Pa. A report on the effectiveness of his "bi-cycle" concept had not been published by the time of this writing.

Annually, beginning in 1966, physicians in and about New Haven, Conn., have voluntarily organized a review of internal medicine. From an initial emphasis on preparation for board examinations the course evolved into a comprehensive, clinically oriented review of the field. It has been characterized by a steady enrollment growth (from 26 to 60 physicians over the four years; 20% of the enrollees repeating the course one or more times), high attendance rates (75 to 85%), and low costs (between 25 and 45 cents per lecture hour).[22] The initial 17-hour course grew, over the years, to 26 hours.

Dr. MacLeod[22] considers the growth of this "highly structured yet informal" review course to have been a function of the relevancy of the course material and a sensitivity to the changing needs of the group. "The principles of student participation in planning and administration, and continuous feedback through questionnaires served as the basic framework for the organization of the course." It may also be pertinent that 75 to 85% of the enrollees were out of medical school less than 10 years, that "one third to one half" held positions at Yale or other teaching hospitals and about the same proportion were candidates for the American Board of Internal Medicine examination, Part I.

No continuing medical education program, no matter how well conceived, can help the physician who declines to participate or who is thwarted or frustrated in his efforts to learn. The physician must be motivated, and impediments in the way of his development of professional competence must be removed.

In addition to the AAGP requirement for participation in continu-

ing-education activities as a condition of membership, examples of inducements now being offered to physicians to continue their medical learning beyond the completion of their formal education include such things as The Physician's Recognition Award given by the AMA, the certificate that attests to their doing so, the requirement of the American Board of Family Practice for periodic recertification and the requirement of the Oregon Medical Association (the state medical society) of proof of participation in a minimum number of educational programs for continued membership in the society. Thought is being given to periodic recertification by the American Board of Internal Medicine and the American College of Surgeons. Both the American College of Physicians and the American Psychiatric Association have self-evaluation programs in operation and the American College of Surgeons and the American Academy of Pediatrics are in the process of developing such programs. Self-evaluation programs, however, are not likely to have much effect on the nonmotivated physician.

Summary and Conclusions

There is said to be a shortage of physicians and a crisis in medical care. That there is a shortage of physicians, at least in terms of demand, particularly in the ghettos of large cities and in many rural areas appears to have been documented to the satisfaction of most authorities.[23] That crisis in medical care has arisen directly from this shortage is a moot point. Nevertheless, it now is national policy to improve the quality and quantity of medical care, particularly of that provided for the poor and other especially vulnerable persons, such as the aged and the mentally ill. The continuing medical education of the practicing physician has been incorporated as a major component of the Regional Medical Programs to forward these ends. Continuing medical education, in this concept, involves a good deal more than providing opportunities for the physician to listen to lectures and take refresher courses. Intrinsic are his involvement in the community, his knowledge and use of community facilities and expertise, and the efficiency of his operation. Impending is the additional responsibility for many physicians to make advantageous use, from the standpoint of the community, of a new type of allied health professional, the "physician's assistant."

Postgraduate or continuing education, as it now is being termed, has been with us ever since we have had graduates. All physicians par-

ticipate, to a varying extent, in one or more of the available forms which range from empiricism through study of and reference to professional journals and texts, peer consultations, in-hospital programs (grand rounds, clinical-pathological conferences, case audits, etc.) to periodic lectures and refresher courses. Many physicians in active practice appear to make considerable use of, and regard highly "consultation with colleagues"[8] and have little use or esteem for refresher courses[3, 8] and hospital staff conferences.[8] No doctor of medicine relies entirely on his own experiences. Empiricism is equated with quackery.

The introduction of audiovisual aids, particularly television and radio, into continuing medical education, as a means of bringing authoritative and useful information to the practicing physician in such a way that he will retain it, does not appear to have had results anywhere near commensurate with the time, effort, and money expended on facilities and program production and distribution. A number of reasons have been advanced for this, but a major defect appears to be inadequacy of the "soft-ware" of both subject matter and method of presentation. More and better evaluative work on the effectiveness of radio and television as practical and acceptable learning aids for the practicing physician needs to be done before we can make a recommendation on their general use for this purpose.

It must be said that deficiencies in evaluation and lack of good evidence for lasting learning effects on participating student-physicians also exist in regard to other programs and courses used and promoted for the continuing medical education of the practicing physician. The well-prepared and motivated physician learns, and applies what he learns, almost regardless of the pedagogic merits of the course or of the teacher. He who is not well grounded and lacks interest learns little and quickly forgets that little, even with the best program and teacher. In between these two extremes there are many physicians whose standards of medical practice might well be affected by the suitability and educational merit of teaching exercises to which they are exposed. Because of this variable, because of the inability to measure accurately and reliably the full extent of a physician's practical knowledge by examinations and because of varying discrepancies of multiple causation between what physicians know about the art and science of medicine and the standard of care received by their patients, the evaluation of continuing medical education programs is a very difficult matter, one

which might be made easier by focusing attention on the end point, the care of patients.

In view of the foregoing, the Committee on Medical Education concludes, as has Dimond,[17] that the certificate concept, if judged only on the basis of total number of hours in some kind of postgraduate course, is fallacious in that it implies unwarranted merit to course work. The committee also strongly opposes any mandatory examinations for maintenance of the currency of one's medical license. The available information does not support a positive relation between the results of most such tests and the quality of care provided by practicing physicians for their patients.

The committee finds that, since the public and private hospitals of New York State and, particularly, those of New York City represent, at their best, a concentration of clinical and scientific facilities and talent well above the national average which are not being used to full advantage in many instances,[16] since the motivated physician will and does take advantage of those worthwhile opportunities for learning that are made available to him and, since 35% of the physicians in the metropolitan area are reported to have no hospital connections and only about 25% of practicing physicians are said to make use of their presumed educational opportunities,[16] the prime problems to be overcome in regard to continuing medical education in the New York metropolitan region are: 1) the lack of motivation among physicians; 2) impediments in the path of some physicians to advancing their knowledge and practical skills; and 3) the failure of community hospitals to meet the needs of neighborhood physicians—to become involved in the communities which they presumably serve.

The committee recommends:

1) As a very important incentive to better medical practice, peer-group evaluation of the individual physician in his own working environment. It considers as of at least equal importance measures designed to make that environment as conducive as possible to providing optimal medical care.

2) Active encouragement of group practice and the establishment of community health centers to increase the availability to the practicing physician of the supporting services of allied health personnel, to improve and promote ambulatory care, to expedite more efficient and productive use of the physician's knowledge and skills, to promote

preventive medicine, to help reduce the over-all cost of medical care, and to decrease the likelihood of the development of professional isolation of the community physician.

3) Strengthening all record-keeping procedures in hospitals by improving secretarial services and developing computer techniques, thus increasing the usefulness of such records as instruments of education and facilitating the audit of caring for patients.

4) Establishing programs based on management-type or audit-type procedures whereby both hospital and community physician may participate in mass audit exercises, reviewing each other's charts or record-room charts generally, to indicate features of particular diseases which must be considered and appropriate approaches in their management.

5) Establishing consultative clinics to which community physicians may bring problem cases for review by recognized consultants.

6) Establishing a central mechanism for the more efficient and wider dissemination of information on medical educational opportunities for practicing physicians in the New York metropolitan area.

7) Strengthening community hospital libraries along lines recommended by the Post-graduate Medical Institute of Massachusetts[24] and the National Library of Medicine, and tying them into a computerized library network, with strategically situated terminals, backed by the facilities of the New York Academy of Medicine Library-Medical Research Library of Brooklyn-New York Medical Library Center complex.

8) Expanded study and critical evaluation of audiovisual and other technical aids to continuing medical education and communication.

REFERENCES

1. Smythe, C. McC.: Potential educational services from a national biomedical communications network. Report of a conference. *J. Med. Educ. 44:*1084, 1969.
2. Dennis, J. L.: Medical education: Its responsibility to society. J.A.M.A. 213: 585, 1970.
3. Carmichael, H.: Panel on Existing Self-Evaluation Programs. In: *Congress on Medical Education.* Council on Med. Educ., A.M.A. Chicago, February 6, 1970.
4. Du Bois, A. B., Nemir, Jr., P., Schumacher, C. F. and Hubbard, J. P.: Graduate medical education in basic sciences. *J. Med. Educ. 44:*1035, 1969.
5. Menzel, H., Maurice, R. and McGuinness, A. C.: The effectiveness of the televised clinical science seminars of the New York Academy of Medicine. *Bull. N. Y. Acad. Med. 42:*679, 1966.
6. Stokes, J. F.: A British view of the American scene. *Pharos 30:*89, 1967.
7. Mock, R. L., McCoard, B. F. and Prest-

wood, R.: Northern California postgraduate medical television: An evaluation. *J. Med. Educ. 45*:40, 1970.

8. Hunter, A. T.: *A Report on Project No. 605:, 7-418, Medical Audience Educational Program.* London, Ont., Faculty of Medicine, Univ. Western Ont., 1970.
9. Lauler, D. P.: Communications in medicine. *Mod. Med. 94:* June 29, 1970.
10. Williams, D. H.: A taxonomy of continuing medical education endeavor. *Canad. Med. Ass. J. 96:*1040, 1967.
11. Taylor, C. W., Lewis, E. B., Nelson, E., Loughmiller, G. C. and Price, P. B. Synthesis of multiple criteria of physician performance. *J. Med. Educ. 44:*1063, 1969.
12. Williamson, J. W. and McGuire, C.: Consecutive case conference: An educational evaluation. *J. Med. Educ. 48:* 1068, 1968.
13. Lewis, C. E. and Hassanein, R. S.: Continuing medical education: An epidemiologic evaluation. *New Eng. J. Med. 282:*254, 1970.
14. Sternleib, I.: *Practitioners' Needs and Desires in the Area of Continuing Medical Education.* An Address to the Committee on Medical Education of the New York Academy of Medicine, December 11, 1969.
15. Torrens, P. R. and Weinstein, K. Role of the urban teaching hospital in training of nonaffiliated physicians. *J.A.M.A. 204:*435, 1968.
16. New York State Committee on Medical Education: *Education for the Health Professions.* Albany, N. Y. The Board of Regents, New York State Education Department, 1963.
17. Dimond, E. B.: Changing trends in postgraduate education. *Mod. Med. 83:*1970.
18. Division of Scientific Activities, A.M.A.: *Continuing Medical Education.* Chicago, A.M.A., 1968.
19. Collet, L. V. S. and Dohner, C.: Change in attitude as an index of effectiveness for short courses in continuing medical education. *J. Med. Educ. 45:*237, 1937.
20. Eisele, C. W.: The medical audit in continuing education. *J. Med. Educ. 44:* 263, 1969.
21. Brown, Jr., C. R.: *Relationship of Patient Care to Continuing Education.* A.M.A. Congress on Medical Education, Chicago, February 9, 1970.
22. MacLeod, G. K.: Continuing medical education: One approach. *J.A.M.A. 212:* 1171, 1970.
23. Fein, R.: *The Doctor Shortage, An Economic Diagnosis.* Washington, D.C., Brookings Inst., 1967.
24. Stearns, N. S. and Ratcliff, W. W.: A core medical library for practitioners in community hospitals. *New Eng. J. Med. 280:*474, 1969.